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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/572,560

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Atsushi Oma

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EXAMINER

RHEE, JANE J

ART UNIT

PAPER NUMBER

1795

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DELIVERY MODE

03/03/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/572,560	Applicant(s) OMA, ATSUSHI	
	Examiner JANE RHEE	Art Unit 1795	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/13/06, 3/17/06</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

1. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Huebscher et al. (3565166).

As to claim 1, Huebscher et al. discloses fuel cell power plant comprising: at least one fuel cell comprising an anode, a cathode, and an electrolyte membrane gripped therebetween, the fuel cell generating an electric power by an electrochemical reaction through the electrolyte membrane of hydrogen supplied to the anode and oxygen supplied to the cathode (figure 1), and a device which condenses water vapor staying around at least the anode after the fuel cell has stopped power generation (figure 1 number 50, condenser).

As to claim 2, Huebscher et al. discloses wherein the condensing device is a cooling device which cools a fuel cell (figure 1 number 50).

As to claim 3, Huebscher et al. discloses wherein the power plant further comprises a sensor which detects a temperature of the fuel cell, and a programmable controller programmed to stop operation of the cooling device when the temperature of the fuel cell falls to a predetermined temperature (figure 1 number 52).

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As to claim 4, Huebscher et al. discloses wherein the fuel cell is formed from a fuel cell which generates power within a temperature range from 60 degrees Centigrade to 90 degrees Centigrade and the predetermined temperature is set not higher than 60 degrees Centigrade (col. 2 lines 41-71).

As to claim 5, Huebscher et al. discloses wherein the fuel cell further comprises a coolant passage which cools the anode and the cooling device comprises a coolant recirculation passage connected to the coolant passage, a heat exchanger which cools the coolant, and a pump which recirculates coolant cooled by the heat exchanger to the coolant passage via the recirculation passage (figure 1 number 38, 28, 24).

As to claim 6, Huebscher et al. discloses wherein the fuel cell further comprises a hydrogen passage which supplies hydrogen to the anode, the hydrogen passage being formed parallel to the coolant passage in the fuel cell, and the recirculation passage is connected to the coolant passage such that the coolant flow direction in the coolant passage is identical to the hydrogen flow direction in the hydrogen passage (figure 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 7-9,12-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huebscher et al. in view of Reiser et al. (6312842).

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Huebscher et al. discloses the power plant described above. Huebscher et al. fail to disclose wherein the power plant is installed in a vehicle, the vehicle comprises a vehicle compartment and an air conditioning device which supplies cooled air to the vehicle compartment, the fuel cell further comprises an air passage which supplies oxygen as air to the cathode, and the cooling device further comprises a device which supplies cooled air from the air conditioning device to the air passage.

Reiser et al. teaches wherein the power plant is installed in a vehicle, the vehicle comprises a vehicle compartment and an air conditioning device which supplies cooled air to the vehicle compartment, the fuel cell further comprises an air passage which supplies oxygen as air to the cathode, and the cooling device further comprises a device which supplies cooled air from the air conditioning device to the air passage for the purpose of cooling the burned anode exhaust prior to entry into the fuel cell (col. 9 lines 34-35).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Huebscher et al. with wherein the power plant that is installed in a vehicle, the vehicle comprises a vehicle compartment and an air conditioning device which supplies cooled air to the vehicle compartment, the fuel cell further comprises an air passage which supplies oxygen as air to the cathode, and the cooling device further comprises a device which supplies cooled air from the air conditioning device to the air passage in order to cool the burned anode exhaust prior to entry into the fuel cell (col. 9 lines 34-35).

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Huebscher et al. fail to disclose wherein the fuel cell further comprises a hydrogen passage which supplies hydrogen to the anode, and the power plant further comprises an outside air entry blocking device which blocks entry of outside air to the hydrogen passage after the fuel cell has stopped power generation and wherein the outside air entry blocking device comprises a valve which seals the hydrogen passage

Reiser et al. teaches a hydrogen passage which supplies hydrogen to the anode, and the power plant further comprises an outside air entry blocking device wherein the outside air entry blocking device comprises a valve which seals the hydrogen passage for the purpose of restricting passage of reducing fluid fuel from entering the primary oxidant passage (col. 9 lines 23-27).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Huebscher et al. with a hydrogen passage which supplies hydrogen to the anode, and the power plant further comprises an outside air entry blocking device wherein the outside air entry blocking device comprises a valve which seals the hydrogen passage for the purpose of restricting passage of reducing fluid fuel from entering the primary oxidant passage.

Huebscher et al. fail to disclose wherein the fuel cell further comprises a hydrogen passage which supplies hydrogen to the anode, and the power plant further comprises a catalytic burner connected to the hydrogen passage which burns anode effluent discharged from the hydrogen passage.

Reiser et al. teaches a hydrogen passage which supplies hydrogen to the anode, and the power plant further comprises a catalytic burner connected to the hydrogen

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passage which burns anode effluent discharged from the hydrogen passage for the purpose of generating adequate heat (col. 7 lines 25-26).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Huebscher et al. with a hydrogen passage which supplies hydrogen to the anode, and the power plant further comprises a catalytic burner connected to the hydrogen passage which burns anode effluent discharged from the hydrogen passage in order to generate adequate heat (col. 7 lines 25-26).

Huebscher et fail to disclose wherein the power plant further comprises a separate charge storage device which supplies power to the condensing device.

Reiser et al. discloses a separate charge storage device (figure 1 number 46) which supplies power to the condensing device for the purpose of mixing anode exhaust stream with cathode exhaust stream and then exits the plant (col. 7 lines 14-15).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Huebscher et al. with a separate charge storage device which supplies power to the condensing device for the purpose of mixing anode exhaust stream with cathode exhaust stream and then exits the plant (col. 7 lines 14-15).

3. Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Huebscher in view of Reiser et al. and in further view of James et al. (6406805).

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Huebscher discloses the power plant described above. Huebscher et al. fail to disclose wherein the outside air entry blocking device comprises a water trap which allows gas discharge from the hydrogen passage and wherein the outside air entry blocking device further comprises a valve which discharges gas discharged from the hydrogen passage into the atmosphere without passing through the water trap.

James et al. teaches wherein the outside air entry blocking device comprises a water trap which allows gas discharge from the hydrogen passage and wherein the outside air entry blocking device further comprises a valve which discharges gas discharged from the hydrogen passage into the atmosphere without passing through the water trap for the purpose of removing water from the hydrogen stream or directing surplus hydrogen or other gases and water directly to the atmosphere (col. 4 lines 4-6,48-50).

Therefore, it would have been obvious to one having ordinary skill in the art at the time applicant's invention was made to provide, Huebscher et al. with the outside air entry blocking device comprises a water trap which allows gas discharge from the hydrogen passage and wherein the outside air entry blocking device further comprises a valve which discharges gas discharged from the hydrogen passage into the atmosphere without passing through the water trap for the purpose of removing water from the hydrogen stream or directing surplus hydrogen or other gases and water directly to the atmosphere (col. 4 lines 4-6,48-50).

Conclusion

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to JANE RHEE whose telephone number is (571)272-1499. The examiner can normally be reached on M-F 9-6.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Patrick Ryan can be reached on 571-272-1292. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Jane Rhee/
Primary Examiner, Art Unit 1795